



AP1000 Initial Test Program

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Initial Test Program

- The overall Initial Test Program (ITP) objective is to demonstrate that:
 - The plant has been constructed as designed,
 - The systems perform consistent with the plant design, and
 - Activities culminating in operation at full power are performed in a safe, controlled manner
- ITP consists of a series of tests categorized as construction and installation, preoperational, and startup tests. (DCD Section 14.4)
- Preoperational and/or startup testing is performed on a variety of systems relied upon for safety.



Initial Test Program

- Construction & Installation Testing: Construction Testing – Verifies adequacy of construction & installation process; and, Component Testing – Conducts initial equipment operation & functional checks
- Pre-Op Testing: System-level functional testing & integrated systems testing at normal operating conditions
- Startup Testing: Initial fuel load, Pre-critical tests, Initial Criticality, Low-power (<5%) testing, and Power ascension tests



NRC ITP Working Group

- Collaborative organizational effort
 - Office of New Reactors (NRO)
 - Region II
 - Office of Nuclear Reactor Regulation (NRR)
- Charter Objectives
 - Develop NRC inspection guidance related to preoperational, startup, power ascension testing
 - Establish the requirements for a preoperational and startup testing inspection program
 - Construct the regulatory framework necessary to implement the program
 - Provide for information and training on this program



ITP Inspection

- NRC inspects a sample and focuses on performance-based testing activities.
 - IP 70367 – Inspection of Preoperational Test Program
 - IP 70702 – Inspection of Preoperational Test Performance
 - IP 72401 – Inspection of Start-Up Test Program
 - IP 72304 – Start-Up Testing for AP1000 (draft)
- Inspection efforts will include the inspection of
 - Inspection, Tests, Analysis and Acceptance Criteria (ITAAC)
 - First-of-a-kind (FOAK) Tests
 - Regulatory Guide 1.68 Testing Requirements



ITP Inspection

- Inspection efforts will include (on a sampling basis):
 - Programmatic Review
 - Procedure Review
 - Test Witnessing
 - Test Results Review
 - Quality Assurance Review



ITP Cooperative Exchange Activities

Purpose

- Establish a working level information exchange on ITP development activities between vendors, licensees & regulators
- NRC/NNSA annual bilateral information exchange
- Gain better understanding of lessons learned from China's ITP
- Discuss and compare regulatory and licensing processes for the ITP
- Discuss cooperative inspector exchanges for inspection preparation and ITP test observation



Commissioning Cooperative Exchange Activities





Next Steps

- Continue development of ITP inspection plans
- Continue ITP Cooperative Exchange Activities
- Provide focused training on ITP requirements, inspection guidance, best practices, lessons learned and operating experience



Questions / Comments